

Appl. No. : **Unknown**
Filed : **Herewith**

AMENDMENTS TO THE CLAIMS

CLAIMS

1-15 (Cancelled)

16. (New) A laser marking system configured to mark a substrate comprising at least one of paper, synthetic paper and resin film, the substrate being sufficiently sensitive to emitted light that, when exposed, a reaction occurs at at least one point, the reaction marking the substrate, the system comprising:

a laser light emitting source;

means for transmitting light from said laser light emitting source to said at least one point on the substrate; and

means for displacing said substrate relative to said laser light emitting source, wherein

said laser light emitting source comprises an array of lasers arranged for simultaneous multi-point marking, and

said array lasers comprise semi-conductor laser diodes configured to emit light in at least one of the infra red and near infra red spectrums, whereby the substrate, being sufficiently sensitive to the at least one of infra red and near infra red radiation, is marked.

17. (New) A system as claimed in claim 16, further comprising a heater primarily configured to heat said substrate prior to exposing said substrate to the laser light, whereby the energy required to be supplied by said array of lasers for marking said substrate is reduced.

18. (New) A system as claimed in claim 17, further comprising drive electronics and a heat exchanger, wherein at least one of said array of lasers and said drive electronics generates heat and said heat exchanger transfers the heat generated to said substrate.

19. (New) A system as claimed in claim 17, wherein the heater comprises a light emitter.

20. (New) A system as claimed in claim 16, comprising another light emitter positioned adjacent to said laser array and adapted to supply sufficient light so as to bring said substrate

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close to the marking threshold, wherein while said array of lasers emits light, the substrate passes the marking threshold due to the combined effect of said laser array and said other light emitter.

21. (New) A system as claimed in claim 20, wherein said light emitter emits light to said substrate at a point substantially coincident with the point of laser radiation.

22. (New) A system as claimed in claim 16, comprising means for varying the energy supplied to each point of said substrate by varying over time at least one of the pulse and amplitude of the transmitted light, whereby variation in mark pigmentation may be achieved.

23. (New) A system as claimed in claim 16, wherein at least one optical element is located between said lasers and said substrate.

24. (New) A system as claimed in claim 23, wherein said at least one optical element incorporates at least one of a single bulk lens, an array of micro lenses, a wave guide, a graded-index lens, a diffractive optical element, and a reflector.

25. (New) A system as claimed in claim 16, further comprising a plurality of radiation outputs and means for switching the path of radiation to selected outputs.

26. (New) A system as claimed in claim 16, further comprising means for directing the radiation in a plurality of directions.

27. (New) A system as claimed in claim 25, further comprising at least one of a mechanically displaceable optical element, an electronically switchable diffractive element, and a branched wave guide.

28. (New) A system as claimed in claim 26, further comprising at least one of a mechanically displaceable optical element, an electronically switchable diffractive element, and a branched wave guide.

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29. (New) A system as claimed in claim 16, wherein each said laser is configured to be pulsed.

30. (New) A laser marking system configured to mark a substrate comprising at least one of paper, synthetic paper and resin film, the substrate being sufficiently sensitive to emitted light that, when exposed, a reaction occurs at at least one point, the reaction marking the substrate, the system comprising:

- a laser light emitting source;

- a conductor configured to transmit light from said laser light emitting source to said at least one point on the substrate; and

- a moving component configured to displace said substrate relative to said laser light emitting source, wherein

- said laser light emitting source comprises an array of lasers arranged for simultaneous multi-point marking, and

- said array lasers comprise semi-conductor laser diodes configured to emit light in at least one of the infra red and near infra red spectrums, whereby the substrate, being sufficiently sensitive to the at least one of infra red and near infra red radiation, is marked.